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Iran's Air Force: Frustrations of a Former Power

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An Intelligence Assessment

NGA Review Complete

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NESA 84-10262C

September 1984

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Iran's Air Force: Frustrations of a Former Power

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An Intelligence Assessment

This paper was prepared by [redacted]
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Iran's Air Force: Frustrations of a Former Power

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Key Judgments

*Information available
as of 17 August 1984
was used in this report.*

The Iranian Air Force—formerly the key to the Shah's strategy of military supremacy in the Persian Gulf—no longer has the resources to carry out effective offensive operations and does not provide effective air support for the Iranian ground forces. Its lack of effectiveness is caused by deteriorating equipment, heavy combat losses, excessive political control, low pilot morale, and dissension between pilots and ground crews. [REDACTED]

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In our judgment, the Iranian Air Force will fall further behind Iraq in air combat capability during the coming months and will remain only a minor factor in the war. Although it will continue to have the ability to raid unarmed tankers and lightly defended targets inside Iraq or the Gulf states, we believe that the Air Force lacks the capability to carry out sustained air attacks against either. [REDACTED]

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Between 65 and 80 fighter aircraft are fully operational, compared to over 400 under the Shah. Nearly 200 fighters have been lost in combat, and almost that many are grounded because of shortages of spare parts and other maintenance needs. Restrictions on the sale or transfer of US-made spare parts have played a key role in handicapping Iran's efforts to keep its aircraft operational. [REDACTED]

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Iran has been unable to find a supplier of fighter aircraft. Potential deals with Libya and China have fallen through. Even if a source of fighter aircraft could be found, we judge it would take at least three to five years before Iran could field an effective air force. Unless Tehran's relations with the West improve dramatically, the Air Force probably will be forced to turn to China, North Korea, or Libya for Soviet-designed aircraft that will be less advanced than those of Iraq and Saudi Arabia. Iran's suspicion of the Soviets suggests that they will not be asked to supply aircraft directly. [REDACTED]

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Moreover, the Air Force suffers from a serious shortage of advanced weapons. Few of Iran's most advanced air-to-air missile, the Phoenix, are operational. [REDACTED]

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[REDACTED] Iranian attacks on Gulf shipping have been handicapped by ineffective antiship weapons. [REDACTED]

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The clerical regime distrusts the Air Force more than the Army or Navy, in part because it was the Shah's favorite service and because most pilots are well educated, US-trained, and have middle- or upper-class backgrounds. Political leaders control the Air Force by attaching "political advisers" to airbases, by bribing key officers with consumer goods, and by playing on the rivalry between officers and technicians.

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For their part, most Air Force pilots are suspicious of the regime.
 they are motivated to fight primarily by material incentives and fear.

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The decline in Iran's offensive capability reduces the threat that Tehran will expand the air war in the Gulf and thereby endanger US ships or personnel. Although we cannot rule out the possibility of suicide missions against US ships by Revolutionary Guard pilots, US fighter aircraft would have a significant advantage in any air clash.

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Figure 1
Iranian Fighter Aircraft Bases



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Iran's Air Force: Frustrations of a Former Power

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With some 475 combat aircraft and over 400 qualified fighter pilots, the Iranian Air Force was one of the largest in the Middle East before the Iranian revolution in 1979. The Khomeini regime moved quickly to establish firm control over the armed forces through a sweeping purge of the officer corps. Suspects were killed or jailed and replaced with officers who proclaimed their loyalty to the Islamic republic. Iranian Air Force personnel were particularly suspect because this was the Shah's favorite service and most Air Force officers were well educated and trained by the United States.

Wartime Role of the Air Force

Although Iranian pilots initially displayed considerable aggressiveness, the Iranian Air Force never has been a significant factor in the war with Iraq, in our judgment. Fighter-bombers frequently attacked economic targets and cities inside Iraq during the first year of the war but did not destroy any important facilities. Attrition of aircraft and pilots and frustration over the limited impact of operations subsequently led the Air Force to restrict combat sorties largely to territorial defense.

Since the first year of the war, Iran has confined its offensive air operations to feeble counterattacks.

Although air defense missions continue on a regular basis near major strategic targets inside Iran, these have not prevented periodic Iraqi airstrikes against economic targets and population centers.

Operations Inside Iraq. In our judgment, Tehran does not want to risk further losses of scarce fighter aircraft by attacking heavily defended strategic targets in Iraq.

We believe that increased Iraqi attacks on Iranian shipping and more effective Iraqi attacks on Iranian ground forces early this year prompted the newly appointed Iranian commander, Col. Hushang Sediq, to step up raids against Iraq.

Further Iranian aircraft losses during the next two months prompted Colonel Sediq to halt all missions inside Iraq,

In our judgment, the Iranians were stunned by the loss of their operational fighters during such a short period of time, with so little effect on the war.

The serious limitations on Iran's ability to trade blows with the Iraqi Air Force were again demonstrated this past summer. Iran briefly resumed attacks inside Iraq in June

In our judgment, Tehran's quick acceptance of a subsequent UN-sponsored cease-fire covering attacks on population centers is further evidence that the regime hopes to husband its limited air assets. We expect Iran will refrain from airstrikes inside Iraq unless Baghdad resumes massive attacks on Iranian cities.

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Support of Ground Troops.

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guns, and HAWK surface-to-air missile batteries. Air defense is poor, however, in part because of inadequate training, [redacted] Early warning radars often cannot determine the height or identity of incoming aircraft, [redacted] suggesting that coverage is ineffective. [redacted]

The Air Force has committed a large proportion of its limited resources to protecting the oil facilities on Khark Island and shipping in the northern Gulf.

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Still, during the past two years the Iraqis have hit merchant ships at will and expanded their attacks to tankers—including at least one loading at Khark Island—with no significant loss of aircraft. [redacted]

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[redacted] Ground forces are often disappointed with resupply and transport support, but shortcomings in this area appear to be caused more by poor ground force planning and coordination than by Air Force inefficiency. Refueling tankers—a dozen KC-707 and KC-747 aircraft—have been particularly important to the Air Force's combat air patrol mission. [redacted]

F-14s fly four- to six-hour patrol missions requiring two or three airborne refuelings. [redacted]

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Air Defense.

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[redacted] These strikes were often ineffective, however, once again demonstrating the Iranians' operational and equipment shortcomings. [redacted]

In our judgment, the Air Force is especially handicapped by its lack of effective antiship weapons. Iran has used television-guided air-to-ground missiles, but these are designed primarily for land targets and have been only marginally effective against tankers, [redacted]

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[redacted] Iran's inability to inflict crippling damage on a moving ship without using

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Iraq's preference for soft targets such as population centers and merchant ships has left Iran's nine air-bases with no significant war damage. The bases are defended primarily by Oerlikon 35-mm antiaircraft guns, lighter Soviet and North Korean air defense

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precision-guided weapons is illustrated by its attack on a tanker in the lower Gulf on 10 June. An Iranian F-4 dropped nine bombs, none of which hit the target,

The aircraft made a final pass firing rockets (probably 2.75 inch) along the bow. Only one of these hit the ship, causing light damage to the deck.

Status of the Air Force

Inventory. We estimate Iran has between 65 and 80 operational fighter aircraft, down from a prerevolution total of over 400. Iran's operational aircraft include 35 to 40 F-4s, 20 to 25 F-5s, and 10 to 15 F-14 fighter aircraft. Although Iran has some 50,000 personnel in the Air Force, we estimate there are fewer than 150 fully qualified fighter pilots.

at least 64 operational fighters at Iran's nine airbases.

the number of operational fighter aircraft could

be as high as 120, but we believe that many of these lack the equipment or weapons for combat operations. We estimate nearly 200 aircraft have been lost in combat since 1980—including at least 10 so far this year—and another 150 are grounded because of a shortage of spare parts or other maintenance needs.

Iran's fleet of operational transport aircraft also has dwindled, although not as seriously as its fighter aircraft force.

only 38 of Iran's prewar inventory of 60 C-130 aircraft are operational

eight 707s, 28 to 37 C-130s, 12 F-27s, 14 Falcon 20s, and two P-3s are operational, some 30 less transport aircraft than were in Iran's inventory at the beginning of the war.

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Iran's Available Fighter Aircraft

	September 1980		Wartime	July 1984	
	Inventory	Operational	Losses	Inventory	Operational
Total	446	233	196	230	70
F-4	195	98	100	80	35
F-5	175	105	90	80	20
F-14	76	30	6	70	15

Note: Estimates of wartime losses and operational readiness of F-4s and F-5s probably are accurate to within (\pm) 10 aircraft. Operational readiness rates for September 1980 were estimated at 50 percent for F-4s, 60 percent for F-5s, and 40 percent for F-14s.

there is a shortage of coolant without which the Phoenix missiles cannot operate. Iranian technicians cannot repair the missiles' defective firing and guidance units.

Logistics and Maintenance.

more than 150 fighter aircraft—two-thirds of Iran's inventory—are nonoperational because of improper maintenance or a shortage of parts. Most of these aircraft have been cannibalized and are strewn around Iranian airfields.

the Iranians have nearly exhausted the spare parts available on cannibalized aircraft.

Spare parts shortages run the gamut from tires to advanced avionics and weapons components.

avionics, engine components, flight control systems, and radar systems were the most critical shortages.

shortages of navigation equipment and air-to-air missile components were the most debilitating.

electronic warfare equipment aboard F-4s is in such a state of disrepair that Air Force headquarters has ordered it removed.

Munitions. The Air Force also suffers from a severe shortage of operational advanced munitions. At Bandar-e Abbas, for example, only six of 13 aircraft assigned to the base are fully armed with two AIM-7s and two AIM-9s each—and less than 30 AIM-7s and 30 AIM-9s are in stock. heat-seeking sensors—critical for missile guidance—are functioning improperly on the AIM-9 missiles.

Many of Iran's AIM-54 Phoenix air-to-air missiles are only marginally operational because of improper storage, poor maintenance, and a lack of spare parts,

only 29 advanced Phoenix missiles out of an inventory of 100 are operational;

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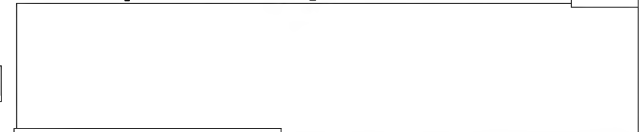
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[redacted] the Iranians have made little progress in improving maintenance. [redacted] much of the more difficult maintenance is performed or supervised by some 120 foreign technicians. Most of these, [redacted] are Filipinos, Koreans, and Taiwanese. [redacted] technicians from at least one West European country are helping to maintain F-4s and F-5s. [redacted]

achieved mixed results. [redacted] Parts that can be obtained only from US weapons manufacturers have been the most difficult to acquire, [redacted] Nontechnical equipment—such as tires and seats—have been the easiest to procure because they are less sensitive and more loosely controlled. Iran has been able to secure some avionics and electronic equipment but usually at inflated prices and through circuitous channels. [redacted]



[redacted] many parts are ordered simply



Resupply. Iranian efforts to secure parts for its US-designed aircraft through the gray arms market have

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[redacted] Tehran believes that pro-US feeling among pilots is so strong that it cannot count on them to engage US forces. [redacted]

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[redacted] at least during one recent period, fighter aircraft flying defensive patrols were not permitted to fly closer than 65 kilometers to major Iranian cities because, [redacted] the regime feared a possible coup attempt. [redacted]

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Maintaining Political Control

As many as 85 percent of Air Force officers are opposed to the Khomeini regime, [redacted]

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[redacted] Many US-trained pilots still have not subscribed to the regime's ideology and are uncomfortable with the political and religious conditions attached to assignments and promotions. Personnel killed or wounded in the first two years of the war normally were replaced by those considered by Tehran as religiously fit rather than professionally competent, [redacted]

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by contacting companies listed in the Swiss defense publication *Interavia*. [redacted] because they can be obtained only from the United States, parts for the F-14 aircraft were almost impossible to obtain. [redacted]

[redacted] Parts for aircraft that have both civilian and military missions such as Boeing 707 and 747 aircraft have been purchased by changing military registrations to civilian ones, [redacted]

Because of restrictions on military sales to Iran, Iran Aircraft Industries has been trying without much success to manufacture engine parts for F-4 aircraft, [redacted] Swiss and Filipino technicians have assisted on this project. [redacted]

Reliability and Morale. In our opinion, Tehran is justifiably concerned over Air Force loyalty to the clerical regime. Most of Iran's combat pilots are US trained. In June 1981 and again in May 1983, Air Force officers were arrested for conspiring to bomb Ayatollah Khomeini's home. [redacted]

The clerics have ordered many of the best qualified combat pilots to take administrative positions and were prepared to remove some 300 officers (pilots and nonpilots) from the service in 1983 because they were suspect. Intervention by Iran's Joint Military Staff saved about half the latter group of officers. [redacted]

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[redacted] morale problems have affected maintenance of combat aircraft. [redacted]

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[redacted] Air Force ground personnel have sabotaged Iranian fighter aircraft, causing an F-5 to crash in mid-1982 and forcing several F-14s to make emergency landings. Pilots have complained of engine and radar malfunctions, landing gear problems, and misfiring weapons. In our judgment, much of the intentional sabotage is caused by the intense rivalry between ground technicians (called homofars) and pilots, which predates the revolution. The homofars are jealous of the pilots' privileged positions and disappointed with their own lack of promotions. Some pilots have become so anxious about the safety of their aircraft that they have sought to be grounded for medical reasons. [redacted]

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Those pilots who continue their operational duties often are motivated by financial considerations rather than by loyalty to the regime or professional pride,

Many stay on to be eligible for a pension. Some homofars with special skills have been retained against their will because they cannot be replaced. Others are said to stay because of the poor civilian job market.

the malaise has even affected Air Force headquarters, where poor working conditions, lack of promotions, and inadequate pay increases are the biggest complaints. Dedicated professional officers look forward to the end of the war because they believe that only then can the Air Force be rebuilt. We have no evidence, however, that this hope has prompted disenchanted officers to organize clandestine "peace" groups or to put pressure on the Air Force command to alter administrative policies.

Most sensitive staff and command positions are assigned to those who have convinced the clerics that they back the regime and have strong religious credentials.

Air Force Commander Colonel Sediq, the Chief of Staff, the Chief of Operations, and the commanders of most tactical airbases and air defense groups actively support the regime.

however, some senior officers pretend to be fundamentalists to gain or keep their positions. Those whose loyalties are suspect

include less important staff officers, the commander of a unit at Vahdati Airbase, the commander of an air defense unit at Khark Island, and all US-trained flight instructors.

At each level of the Air Force command structure, a mullah acts as a political and religious adviser to the commanding officer,

Each airbase has a Revolutionary Society Center headed by a mullah and about one regime adviser for every 100 Air Force personnel,

Junior Air Force personnel consider the mullahs to be the real authorities on the bases with the exception of Shiraz Airbase, where

mullahs do not interfere

with air operations.³ Base commanders elsewhere have no authority over promotions, job assignments, or dismissals; and political leaders in Tehran plan all air combat missions.

the regime also is trying to maintain control of the Air Force by buying the loyalty of service personnel. Both officers and Revolutionary Guards receive gifts of land, scarce consumer goods, fuel, and low-cost housing. Pilots believe that the Revolutionary Guard receives first priority on some consumer goods but that pilots receive the greater share. Most pilots still oppose the regime,

Air Force personnel, in our view, also benefit from political rivalries within the regime. President Khamenei and Assembly Speaker Rafsanjani are competing to expand their influence and attract followers within the Iranian Air Force.

Khamenei has pushed for increased benefits for the officer corps, while Rafsanjani emphasizes benefits for enlisted men and non-commissioned officers.

Pilot Training. Although Iran's pilot-to-combat aircraft ratio of over 1-to-1 is nearly the same as before the revolution, we estimate the Air Force faces a shortage of experienced pilots who are trained for a full range of combat missions. In our judgment, the clerical regime purged more than a third of the 400 fully qualified active fighter pilots in the Shah's Air Force before the war with Iraq, and at least another third were killed during the first two years of war. Perhaps another 20 to 30 have been killed or have defected since then.

³ Shiraz is the primary base for Iran's remaining advanced F-14 aircraft whose air defense and airborne control missions are essential for defending Iranian cities and other strategic targets. The Air Force may have convinced the mullahs that any mistake caused by political interference there would be very costly.

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attacks using small trainer aircraft. With little training, these pilots could fly helicopters or fixed-wing aircraft laden with explosives into ships in the Gulf or oil facilities on the Arabian Peninsula. Eventually they may be competent to strafe targets or drop munitions from low altitudes. Although these are high-risk tactics, in our judgment, they would disrupt shipping and force regional states to a high state of alert. []

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The Air Force established a new flight training school in January 1983, with the ground phase, including electronic warfare training, conducted at Tehran/Mehrabad Airbase and the flight phase at Isfahan,

[] The Air Force has graduated at least 16 new fighter pilots,

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Early last year the Iranians began pressing Libya, Syria, and India for training assistance. []

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[] Syria and India accepted a small number of students. []

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[] the students sent abroad may be learning about the capabilities of Iraqi aircraft or receiving only basic flight instruction. []

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Prospects

In our judgment, the Iranian Air Force cannot play a greater role in the war with Iraq nor a decisive role against any other likely opponent unless it obtains new fighter aircraft and munitions and revives the morale of its pilots. Iraq's renewed attacks on Iranian shipping have dramatically reminded the clerical leaders in Tehran of the importance of airpower to protect Iranian interests in the Persian Gulf. But Tehran's continuing suspicions of the political reliability of the Air Force will complicate plans to rebuild Iran's airpower. []

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Libya accepted at least eight Iranian pilot trainees late last year. []

[] Iran is continuing to train Revolutionary Guard personnel to fly military trainer aircraft, helicopters, and civilian aircraft. []

[] their flying skills are substantially below the level needed to fly combat missions in modern fighter aircraft during the coming year. We cannot, however, rule out their participation in suicide

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We believe Iran's clerical leaders would be satisfied with a force much smaller than that of the Shah—perhaps no more than 150 fighter aircraft. Efforts to obtain such aircraft from North Korea, China, Libya, or other arms suppliers are likely to continue, but Iran's suspicions of the Soviets suggest that they will not be asked to supply aircraft directly. Unless relations between Iran and the West dramatically improve, North Korea and China will remain the most likely sources of fighter aircraft for Iran. [REDACTED]

Iran's total reliance on US-made aircraft up to now will handicap its efforts to rebuild its air combat capability using Soviet-designed aircraft. Building up a new inventory of spare parts, training pilots, retraining technicians, and developing new air tactics will take at least several years. In any event, the Air Force most likely could obtain only older model Soviet-type fighters, at least a generation behind those of Iraq and Saudi Arabia. Such a small, outdated force would not pose a major threat to Iran's regional opponents during the remainder of the decade. [REDACTED]

Impact on the War With Iraq. The Iranian Air Force's reduced combat capability, in our judgment, has been a key factor in allowing the Iraqis to regain the initiative in the war. The Air Force is incapable of preventing Iraqi attacks on ships or population centers and, in our estimate, will be able to play a minor role at best in future Iranian offensives. During the coming year, the Air Force will continue to concentrate resources on defending against Iraqi airstrikes. [REDACTED]

Capability Against the Arabian Peninsula. In our judgment, the Iranian Air Force also lacks the capability to carry out sustained air attacks against the Arab Gulf states. [REDACTED]

[REDACTED] Iran's shortage of operational aircraft at or near Gulf bases, its probable inability to achieve surprise, and Tehran's desire to deny outside powers an excuse for military intervention argue against large-scale Iranian offensive air operations. The Air Force retains the capability to attack individual economic targets on the Peninsula but only if it is willing to accept the risk of heavy

aircraft losses. Three years ago, Iranian aircraft destroyed a Kuwaiti oil-gathering facility and could repeat this success in an isolated attack. [REDACTED]

Unarmed tankers will remain a likely retaliatory target for the Iranians, especially in the southern Gulf outside the Saudi and Iraqi air defense zones. The Iranians have demonstrated a capability to locate and damage a preselected ship and to return safely to base. We estimate the Iranians have enough aircraft and munitions to increase the frequency of these attacks for a short period which could disrupt tanker activity. [REDACTED]

[REDACTED] Iran is attempting to modify naval Standard antiship missiles as replacements for Maverick missiles. The plan suggests that the Air Force recognizes the need for more appropriate weapons, but [REDACTED] early tests have not been encouraging. If technical problems are solved—in our judgment, an unlikely prospect—the Iranians would have a much greater capability for damaging or sinking tankers. [REDACTED]

Implications for the United States. The decline in Iran's offensive air capability reduces but does not eliminate the threat that Iran might expand the air war in the Gulf. [REDACTED]

[REDACTED] We also believe that the Khomeini regime will go out of its way to avoid bombing Soviet arms carriers transporting military equipment for Iraq. Nevertheless, Iran's ability to launch occasional raids against ships or economic targets could result in the loss of US-owned commercial ships or US personnel. [REDACTED]

Tehran probably would use its Revolutionary Guard pilots to carry out suicide attacks or raids against US ships. [REDACTED] "volunteer pilots" are being trained for these missions. The greatest threat to ships from the regular Air Force would be Maverick air-to-surface missiles launched by F-4 aircraft. Because of its limited destructive power, however, the missile probably could not cripple a US warship without a direct hit on the ammunition magazine or engine room. [REDACTED]

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US fighter aircraft, in particular carrier-based F-14s, would enjoy an overwhelming advantage in air-to-air clashes. US F-14s have more advanced IFF equipment and better maintained air-to-air missiles than do the Iranian F-14s. [redacted]

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[redacted] the Air Force has carefully selected four to six politically reliable pilots to fly against US forces, suggesting that there are few professionally trained pilots who can be trusted in a clash with US forces. [redacted]

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